

USSR

UDC: 621.319.5

D.YAKONOV, V. P., SHARIFOV, Ch. A. G.

"A Quantizing Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 17, Jun 72, Author's Certificate No 340071, Division H, filed 13 Jan 70, published 24 May 72, p 190

Translation: This Author's Certificate introduces a quantizing device which contains a supply source, and dosing and storage capacitors between which is connected a discharge device with S-shaped current-voltage characteristic. As a distinguishing feature of the patent, in order to improve quantizing accuracy, eliminate zero displacement of quantization, and simplify the quantizing device, its input is connected through a silicon stabilatron to the dosing capacitor. The power supply is connected in parallel with the dosing capacitor through a resistor. The storage capacitor is connected in series with a discharge resistor, and connected through a diode to the input of the quantizing device.

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UDC 621.373

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D'YAKONOV, V. P., ALI-ZADE, D. G.

"Power Pulse Oscillators Using Avalanche Transistors"

Moscow, Pribery i tekhnika eksperimenta, No 4, July-August, 1970, pp 126-128

Abstract: Oscillators of this type are used principally in experimental nuclear physics as well as various branches of electronics, for excitation of laser diodes, quick recovery diodes, and the like. The advantage of these oscillators is their simplicity, high pulse amplitude, minimal pulse rise time, and good temperature stability. The purpose of this paper is to provide information concerning the operation of domestic transistors in the avalanche mode and to demonstrate the ability of such oscillators to produce power pulses. A schematic of the oscillator, using two or more parallel-connected relaxation oscillators for high pulse amplitude, is shown. Also given is a table of transistor types and their parameters, which shows that one of the best of these devices is the planar epitaxial transistor, which forms pulses of up to 100 volts with a 1-nanosecond rise time for a 75-ohm load resistor. Oscillograms of the circuit's output pulses are shown. The authors conclude that pulse amplitudes of 200 amperes and better can be obtained with the development of special transistor types operating in the avalanche mode.

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Physical Properties

USSR

UDC 669.14:669.04

BAUM, B. A., D'YAKONOVA, L. V., YERMANOVICH, N. A., TYAGUNOV, G. V., and KHASIN, G. A., Sverdlovsk, Zlatoust

"Physical Properties of Molten High-Alloy Steels and Special Alloys"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 43-48

Abstract: The article determines the kinematic viscosity, electrical resistivity, and density of specimens of more than 20 industrial brands of steels and alloys. The properties were measured after 5-15 minute isothermal holding periods, beginning with a temperature increase to 1700-1800° C and then followed by a temperature decrease down to crystallization of the melt. In some cases this measurement cycle was repeated (reheating and then cooling the specimen) without bringing the specimen to solidification. The specimens studied included NZhVI alloy (99.66 percent Fe), EI435, EI437 nickel-base alloys, alloys Kh28, Kh18N10T, EI811, ShKh15, EI736, 12Kh2N4A, iron-base alloys U10, ShKh15, R18, 9Kh18 high-carbon steels, 4Kh9S2, E4, 1/3

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BAUM, B. A., et al., Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 43-48

and 30KhGSNA steels, and alloy 60. The effect of the chemical composition of the specimens, nonmetallic inclusions, and production method on the physical properties was considered.

The results indicate that the kinematic viscosity, electrical resistance, and density of molten steels and special alloys depend mainly on the chemical composition and production method. The phenomenon of hysteresis of properties is observed, indicating differences in the structure of a molten specimen during its heating and cooling. The magnitude of the hysteresis may serve as one of the characteristics of a given specimen along with data on its physical properties. The structure of melts before crystallization (composition and properties of microvolumes, coordination of the atoms in them, etc.) should be regarded as one of the metallurgical heredity factors capable of influencing a number of the service characteristics of the solid metal.

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BAUM, B. A., et al., Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 43-48

The authors thank P. V. GEL'D for his advice and interest in the work.

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Physiology

USSR

UDC 612.816.018.014.46:576.851.097.29

KRYZHANOVSKIY, G. N., POZDNYAKOV, O. M., D'YAKONOVA, M. V., POLGAR, A. A., and SMIRNOVA, V. S., Laboratory of the Pathological Physiology of infectious Intoxications and Electron Microscopy Group, Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR

"Impairment of Neurosecretion in the Myoneural Junctions of Muscle Poisoned With Tetanus Toxin"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 12, 1971, pp 27-31

Abstract: Electrophysiological and electron-microscopic study was conducted of the neuromuscular synapses in the rat diaphragm locally poisoned with tetanus toxin ( $2 \cdot 10^5$  MLD). Injection of the toxin resulted in a progressive decrease in the amplitude of the respiratory burst in the poisoned diaphragm, but it had no effect on the actual nature of the respiratory electrical activity. The animals died in 7 to 9 hours with symptoms of paralysis of the respiratory muscles. A comparison of the histograms for intact neuromuscular preparations isolated from the diaphragm with those for preparations isolated 3 to 3-1/2 hours after injection of the toxin revealed a sharp decrease in the level of spontaneous synaptic activity in the poisoned muscles, an indication

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USSR

KRYZHANOVSKIY, G. N., et al., Byulleten' Eksperimental'noy Biologii i Meditsiny, No 12, 1971, pp 27-31

of impairment of the neurosecretory apparatus. Injection of inactivated toxin did not impair neurosecretion. Electron-microscopic examination showed that the neuromuscular synapse in the poisoned muscle retained its structure. Changes were noted only in the axon terminal in the form of swelling of the mitochondria and increased number of synaptic vesicles. There were no changes in the subsynaptic structures.

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USSR

UDC 542.91 661.718.1

D. YAKONOVA, N. I., MUKHAMETZANOVA, E. KH., SHERMARGORN, I. M.,  
Kazan' Institute of Veterinary Medicine imeni N. E. Bauman

"Organophosphorus Compounds with an  $\alpha$ -Hydroxyalkyl and a Chloromethyl Radicals"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 10, 1971,  
pp 2203-2205

**Abstract:** In a search for biologically active compounds, a series of phosphine oxides and phosphinates were synthesized, which contained, simultaneously an  $\alpha$ -hydroxyalkyl and chloromethyl radicals at the P atom. Bis-(chloromethyl) - $\alpha$ -hydroxyalkylphosphine oxides were obtained by the reaction of bis-(chloromethyl)- or (chloromethyl) ethyl-chlorophosphine with aldehydes or ketones and subsequent hydrolysis of intermediate products. Analogous reaction of (chloromethyl)phosphonous dichloride with benzaldehyde gave (chloromethyl)- $\alpha$ -hydroxybenzylphosphinic acid. Methyl (chloromethyl)- $\alpha$ -hydroxyalkylphosphinates were prepared by condensation of methyl (chloromethyl)hydrogenphosphinate with aldehydes. The yields, elemental analysis data, and mp of the 1/1 products are tabulated and preparation procedures used are given.



USSR

UDC 546.181.1 + 547.391.1.3

TSIVUNIN, V. S., DIYAKONOVA, N. I., Kazan' Veterinary Institute  
imeni N. E. Bauman, Kazan, Ministry of Agriculture USSR

"Reaction of Some Phosphorus Acids With  $\alpha, \beta$ -Unsaturated Acyl  
Halides"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70,  
pp 1995-2001

Abstract: It was proposed that in the reactions of  $\alpha, \beta$ -unsaturated acids with trivalent phosphorus chlorides the latter act as electrophilic agents, the reaction starting by a donor-acceptor interaction of phosphorus (acceptor) with electron pairs of oxygen atoms of the carboxyl functional group (donor). The  $\alpha, \beta$ -unsaturated acyl halide and phosphorus acid react by nucleophilic addition to give the final product. To prove some of the missing links in this mechanism, reactions of  $\alpha, \beta$ -unsaturated acyl halides with dialkyl-phosphorous, -phosphonous, and -phosphinous acids were carried out. It was shown that the above phosphorus acids add easily to the double bond of the  $\alpha, \beta$ -unsaturated acyl chlorides forming acyl chlorides of  $\beta$ -phosphorylated acids, which undergo

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TSIVUNIN, V. S., et al, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 1995-2001

further reactions. The reaction rate increases with transition from dialkylphosphorous to dialkylphosphinous acids. The reactions studied support the idea that phosphorus trichlorides react with  $\alpha, \beta$ -unsaturated acids through the formation stage of phosphorus acid and  $\alpha, \beta$ -unsaturated acyl chloride followed by their interaction.

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D'YAKONOVA, N. P.

JPAS 55942  
9/11/72

EFFECT OF TUNGSTEN ON THE LAVES PHASE STRUCTURE IN THE CO-NB-W SYSTEM  
UDC 669.017.1

Article by K. V. Varil, N. P. D'yakonova, N. V. Orlova, Ya. S. Umanitsky, Moscow Steel and Alloy Institute, Department of Roentgenography and Physics of Metals; Moscow, Izvestiya Vsesoyuznogo Nauchno-Issledovatskogo Tsentra Metallov, No 1, 1972, submitted 2 July 1971, pp 115-117

In the Co-Nb-W ternary system, the following crosssections were investigated: 1A -- Co<sub>2</sub>Nb -- Co<sub>2</sub>W -- the section runs along the boundary of the region of homogeneity of the laves phase (NbCu<sub>2</sub> type) from the Nb side; section 1B is parallel to section 1A and passes through the middle of the region of homogeneity of the Co<sub>2</sub>Nb phase [1], that is, it is shifted toward higher Co content; section 2 -- Co<sub>3</sub>Nb (NbHf<sub>2</sub> type) [1] -- Co<sub>3</sub>W (Nb<sub>2</sub>W type) [2]; section 3 -- Co<sub>3</sub>Nb -- Co<sub>3</sub>W -- Co<sub>2</sub>W. The compositions of the investigated alloys are presented in Table 1.

Table 1  
Composition of the investigated alloys

	at. %		
	Co	Nb	W
1A	1	66.7	33.3
1B	2	66.7	33.3
1B	3	66.7	33.3
1B	4	66.7	33.3
1B	5	66.7	33.3
1B	6	66.7	33.3
1B	7	66.7	33.3
1B	8	66.7	33.3
1B	9	66.7	33.3
1B	10	66.7	33.3
1B	11	66.7	33.3
1B	12	66.7	33.3
1B	13	66.7	33.3
1B	14	66.7	33.3
1B	15	66.7	33.3
1B	16	66.7	33.3
1B	17	66.7	33.3
1B	18	66.7	33.3
1B	19	66.7	33.3
1B	20	66.7	33.3
1B	21	66.7	33.3
1B	22	66.7	33.3
1B	23	66.7	33.3
1B	24	66.7	33.3
1B	25	66.7	33.3
1B	26	66.7	33.3
1B	27	66.7	33.3
1B	28	66.7	33.3
1B	29	66.7	33.3
1B	30	66.7	33.3
1B	31	66.7	33.3
1B	32	66.7	33.3
1B	33	66.7	33.3
1B	34	66.7	33.3
1B	35	66.7	33.3
1B	36	66.7	33.3
1B	37	66.7	33.3
1B	38	66.7	33.3
1B	39	66.7	33.3
1B	40	66.7	33.3
1B	41	66.7	33.3
1B	42	66.7	33.3
1B	43	66.7	33.3
1B	44	66.7	33.3
1B	45	66.7	33.3
1B	46	66.7	33.3
1B	47	66.7	33.3
1B	48	66.7	33.3
1B	49	66.7	33.3
1B	50	66.7	33.3
1B	51	66.7	33.3
1B	52	66.7	33.3
1B	53	66.7	33.3
1B	54	66.7	33.3
1B	55	66.7	33.3
1B	56	66.7	33.3
1B	57	66.7	33.3
1B	58	66.7	33.3
1B	59	66.7	33.3
1B	60	66.7	33.3
1B	61	66.7	33.3
1B	62	66.7	33.3
1B	63	66.7	33.3
1B	64	66.7	33.3
1B	65	66.7	33.3
1B	66	66.7	33.3
1B	67	66.7	33.3
1B	68	66.7	33.3
1B	69	66.7	33.3
1B	70	66.7	33.3
1B	71	66.7	33.3
1B	72	66.7	33.3
1B	73	66.7	33.3
1B	74	66.7	33.3
1B	75	66.7	33.3
1B	76	66.7	33.3
1B	77	66.7	33.3
1B	78	66.7	33.3
1B	79	66.7	33.3
1B	80	66.7	33.3
1B	81	66.7	33.3
1B	82	66.7	33.3
1B	83	66.7	33.3
1B	84	66.7	33.3
1B	85	66.7	33.3
1B	86	66.7	33.3
1B	87	66.7	33.3
1B	88	66.7	33.3
1B	89	66.7	33.3
1B	90	66.7	33.3
1B	91	66.7	33.3
1B	92	66.7	33.3
1B	93	66.7	33.3
1B	94	66.7	33.3
1B	95	66.7	33.3
1B	96	66.7	33.3
1B	97	66.7	33.3
1B	98	66.7	33.3
1B	99	66.7	33.3
1B	100	66.7	33.3

Analysis and Testing

USSR

UDC 669.018.44

CHERNYAK, G. S., VORONIN, N. L., D'YAKONOVA, V. A., MIRONOVA, V. P., and ZUBRILOVA, V. A.

"Estimating the Quality of Heat-Resisting Vacuum-Melted Alloys by the Method of Mathematical Statistics"

Sb. tr. TsNII chern. metallurgii (Collection of Works of Central Scientific Research Institute of Ferrous Metallurgy), 1970, vyp. 77, pp 55-63 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3I749 by authors)

Translation: The article describes results of a "Minsk-22" computer-aided statistical analysis of control determinations of the principal chemical elements, the testing of mechanical properties, and estimates of grain size in the macrostructure of EI437BU and EP109 alloys after vacuum arc refining. It is shown that the distribution of most of the criteria selected for estimating the quality of EI437BU alloy is governed by the normal distribution law and that the strength and ductility characteristics of the alloy are most affected by the macrograin size of upset billets, which in turn depends on the C and Al content of the alloy. It was found that an inverse relation exists in alloy EP109 between the grain size observed in the macrostructure of bars and strength characteristics. Two illustrations. Four tables.

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USSR

UDC 669.245:519.28

CHERNYAK, G. S., VORONIN, N. I., D'YAKONOVA, V. A., MIRONOVA, V. P., and ZUBRILOVA, V. A.

"Mathematical Statistics Estimation of Quality of Vacuum-Produced Heat-Resistant Alloys"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 55-63

Translation: Results are presented from computerized statistical processing of the results of test determinations of the main chemical elements, tests of mechanical properties and estimates of grain size in the macrostructure of the alloys EI437BU and EP109 following vacuum arc remelting.

It is demonstrated that the distribution of most criteria selected for evaluation of the quality of EI437BU alloy follows the normal distribution and that the greatest influence on the characteristics of strength and plasticity of the alloy is that of the grain size of billets, which in turn depends on the content of carbon and aluminum in the alloy.

It is established that EP109 alloy shows an inverse dependence between grain size observed in the macrostructure of bars and strength characteristics. 2 figures; 4 tables.

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USSR

UDC 621.382.5

D'YAKONOV, V.P., BOSYY, V.I., KUZNETSOV, YU.A., KOSTRYUKOV, A.S., TSIGANKOV, V.A.

"Avalanche Transistor And Its Use In Circuit Technics"

V sb. Poluprovodn. pribory v tekhn. elektrosvyazi (Semiconductor Devices In The Technics Of Electrical Communication--Collection Of Works), Issue 9, Moscow, "Svyaz", 1972, pp 159-166 (from RZh:Elektronika i yeye primeneniye, No 5, May 1972, Abstract No 5B187)

Translation: The structure and special features of a Type GT-338 avalanche transistor are described. A number of pulse circuits using avalanche transistors are presented, which provide the possibility of shaping pulses with a rise time less than 1 nanosec and an amplitude up to 10-15 V and higher at a 75-ohm load. Circuits using Type GT-338 avalanche transistors are characterized by high temperature stability. 7 ill. 12 ref. Summary.

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# Steels

USSR

UDC 669.14.018.292

NIKITIN, V. N., LITVINENKO, D. A., D'YAKONOVA, V. S., SHIFRINA, N. P., and SLAVOVA, A. I., Central Scientific Research Institute of Ferrous Metallurgy and the Cherepovets Metallurgical Plant

"Investigation of Steel 23KhG2AFR with a Minimum Yield Strength of 50 kgf/mm<sup>2</sup>"

Moscow, Stal', No 7, Jul 73, pp 647-649

Abstract: Steel 23KhG2AFR was developed on the basis of steel 16G2AF with a guaranteed yield strength of 45 kgf/mm<sup>2</sup>. This steel was tested without boron (A) and with 0.0027% boron (B) and having the following chemical composition (in %):

	C	Mn	Si	Cr	V	N	S	P
A	0.20	1.40	0.43	0.66	0.026	0.011	0.029	0.024
B	0.17	1.50	0.53	0.50	0.095	0.015	0.020	0.019

In steel 23KhG2AFR the boron is bonded in the carbonitride with a crystal lattice of the type B(CN)<sub>0.35</sub> or B(CN). Boron, bonding the nitrogen and carbon, evidently refines the grain boundary zones of impurities which previously

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NIKITIN, V. N., et al., Stal', No 7, Jul 73, pp 647---649

influence the increase of ductility and impact strength of the steel. After an optimum heat treatment -- normalization at  $910^{\circ}\text{C}$  and tempering at  $700^{\circ}\text{C}$  -- steel 23KhG2AFR had the following mechanical properties in 4-mm thick sheet: yield strength --  $50 \text{ kgf/mm}^2$  (min), tensile strength --  $70 \text{ kgf/mm}^2$  (min), elongation -- 18% (min), and impact strength --  $4.0 \text{ kgf-m/cm}^2$  (min) at  $-40^{\circ}\text{C}$ . Steel 23KhG2AFR is sensitive to notching under static and dynamic loads and is characterized by good engineering properties. This steel can be satisfactorily welded with the weld joint having the same strength as the base metal. Four figures, one bibliographic reference.

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USSR

UDC 669.14

SMOLYARENKO, D. A., KAPUSTIN, K. A., SEMENOV, Yu. N., D'YAKONOVA, V. S. and  
ALYMOV, A. A.

"Investigation and Modern Production of Quality Low-Carbon Nonaging Steel for  
Cold Rolling, in High-Capacity Martin Furnaces"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS) (Collection of  
Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys),  
Izd-vo "Metallurgiya," No 61, 1970, pp 92-101

Translation of Abstract: Results are presented of an investigation of test  
smeltings of A8FKP steel. The most promising way of improving homogeneity of  
low-carbon nonaging steel, the surface quality and the complex of physico-  
chemical properties, including its propensity to aging is the deoxidation of  
the steel in a ladle by ferrovanadium and electric furnace ferromanganese. 5  
figures, 1 table, 6 references.

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USSR

UDC 621.039.53:628.165.04

D'YAKOV, A. A., KONSTANTINOVA, Ye. V., and SHATSILLO, V. G.

"Construction Materials for Distillation Desalination Equipment"

Moscow, Vodosnabzheniye i Sanitarnaya Tekhnika, No 7, 1973, pp 21-23

Abstract: The construction materials analyzed in this paper assure the necessary performance of the existing equipment. However, in trying to solve one of the most important purification problem -- lowering the net cost of the distillate -- new materials will have to be considered. In designing new equipment, one must consider the use of aluminum, various plastics, carbon steel as well as reinforced concrete, wherever applicable.

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USSR

UDC 542.48

KOLOTYGIN, Yu. A., D'YAKOV, A. A., FILIPPOV, S. N., and POLYAK, T. I.,  
Sverdlovsk

"Acid Treatment of Distilled Sea Water"

Moscow, Vodosnabzheniye i Sanitarnaya Tekhnika, No 10, 1972, pp 5-6

Abstract: Experimental results are reported on the study of thermal decomposition of bicarbonates in partially acidified Caspian Sea water. It was shown that the decomposition of bicarbonates can be almost completely prevented by acidifying the water to pH 5-6. On this basis a method was developed for evaporation of sea water following a partial acidification of the starting material.

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USSR

UDC 551.463:669.018.8

KONSTANTINOVA, Ye. V., SEMENOVA, L. S., and D'YAKOV, A. A.

"The Effect of Sea Water Composition on Corrosion of Copper Alloys Used Under Desalination Conditions"

Moscow, Vodosnabzheniye i Sanitarnaya Tekhnika, No 6, 1971, pp 13-18

Abstract: Examining pipes made of different materials showed that in laboratory conditions the Black Sea water is most corrosive and the Caspian Sea water the least corrosive toward copper alloys. Stannous brass is the least corrosion-resistant material, aluminum brass being poorer than MNZn5-1 alloy, and copper-nickel -- the best material. The aggressiveness of sea water depends on the ratio of sulfate:chloride ion concentrations; the corrosive action decreases as this ratio increases. Aggressiveness also depends on the total salt content in sea water: the lower the content, the greater the corrosive action because it dissolves then more oxygen. Finally, the absolute concentration of chloride and sulfate ions has an effect: the sulfate ions inhibiting the corrosion and the chloride ions accelerating it.

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Acc. Nr:

AP0046112

Abstracting Service:  
CHEMICAL ABST.

Ref. Code:

5/70 UR0365

92799e Spontaneous decomposition of solutions for chemical nickel plating. Rozenblyum, R. G.; D'yakov, A. A. (Sverdlovsk. Nauch.-Issled. Inst. Khim. Mashinostr., Sverdlovsk. USSR). *Zashch. Metal.* 1970, 6(1), 72-6 (Russ). The decompn. of Ni plating solns. is accelerated by an increase in the concn. of hypophosphate ions and a decrease in the concn. of Ni and acetate ions. The presence of a catalytic surface, such as the object to be plated, accelerates decompn. as does the removal of O from the soln. Lowering the temp. retards decompn. The decompn. process has an induction period, apparently necessary for the formation of a catalytic surface. M. Hosh

REEL/FRAME

19781189

Acc. Nr:

AP0046111

Abstracting Service:  
CHEMICAL ABST.

5/70

Ref. Code:

URO365

92800y Chemical nickel-molybdenum coating from an ammonium citrate solution. Rozenblyum, R. G.; Burakov, M. B.; D'yakov, A. A.; Burakova, E. A.; Efimova, M. M. (Sverdlovsk. Nauch.-Issled. Inst. Khim. Mashinostr., Sverdlovsk, USSR). *Zashch. Metal.* 1970, 6(1), 76-8 (Russ). Ni-Mo or Ni-Mo-P were deposited from solns. contg. Na citrate 47, and  $\text{NH}_4\text{Cl}$  30 g/l.; the pH was 8-9. Best results were obtained with solns. contg.  $\text{NiCl}_2$  and  $\text{NaH}_2\text{PO}_4$  20 g/l. and solns. contg. 10 and 20 g/l. of the 2 salts, resp. The amt. of Mo in the deposit increased with its content in the plating soln. and with a decrease of Ni in the same soln. The max. concn. of Mo in the deposit was 8-10%. The deposits contg. P did not crack even if they were 50  $\mu$  thick, whereas Ni-Mo deposits cracked when they were appreciably thinner.

M. Hoseh

MT

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REEL/FRAME

19781188

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USSR

*D*  
DRONOV, A. P., D'YAKOV, A. S., KUDRYAVTSEV, YE. M., SOBOLEV, N. N.

"Gas Dynamic CO<sub>2</sub> Laser With Escape Through a Slot of the Working Mixture Heated in the Shock Tube"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 11, No 11, 5 June 1970, pp 516-519

Abstract: This article contains a description of an experiment and the results of detecting amplification and generation of the laser radiation of CO<sub>2</sub> molecules during expansion of a gas through a slot. In this case greater cooling rates are obtained than when using a nozzle. A triple mixture of 73 percent He, 18 percent CO<sub>2</sub>, and 9 percent N<sub>2</sub> was used. The mixture was heated to 1,800 ±200°K (at a pressure of 25 atmospheres) in a shock tube beyond a reflected shock wave. The shock tube with an inside diameter of 90 mm had a partition with a slot 0.7 x x 60 mm. The slot was covered with foil (10 microns thick) which made it possible to obtain different pressures on each side of the slot before the experiment. On reflection of the shock wave the foil ruptured practically instantaneously, and after this the gas mixture heated by the reflected shock wave leaked from the forechamber into the  
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DRONOV, A. P., et al, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 11, No 11, 5 June 1970, pp 516-519

receiver (at a pressure of 1 torr). It was confirmed in the experiments that cooling of the carbon dioxide gas on expansion of the jet in a vacuum and the decrease in density lead to the fact that at some distance from the slot in the receiver a maximum inversion (and amplification) must be observed. The maximum value of  $k \sim 10$  percent / $k$  is the amplification or absorption coefficient/ was reached at a distance of 35 mm from the slot. Because of the nature of the amplification coefficient the axis of the resonator was located at a distance of 35 mm from the slot in the experiments to obtain generation. An oscillogram is presented showing a standard recording of generation. The length of the generation pulse coincides with the length of the amplification pulse. This agrees with the picture of infrared glow of the mixture in the receiver. Glow begins somewhat before the amplification and generation processes, and three milliseconds after the time of reflection the glow of the mixture (and its temperature) drops sharply as a result of the effect of the expansion waves arriving at the slot. This leads to a reduction in the amplification and generation.

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USSR

UDC: 669.245'27'292.018.67(088.8)

NAM, B. P., D'YAKOV, I. G., IVANOV, V. I., POZDNYAKOV, V. V., REZONTOV, B. I.,  
GORBUL'SKIY, L. F.

"Alloy for the Centers of the Oxide Cathodes of Electric-Vacuum Devices"

USSR Author's Certificate Number 358397, Filed 23/07/70, Published 18/01/73  
(Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No  
8I711P, by O. Pimenova).

Translation: An alloy is suggested for the cores of the oxide cathodes of electric vacuum devices, differing from known alloys in that in order to improve the sublimation characteristics of the core, increase the stability of the electrical parameters and the durability of electric-vacuum devices, V is introduced in the following ratio of components (%): W 2.0-4.0, V 0.05-0.8, Ni -- remainder. The mechanical properties in the annealed state are:  $\sigma_b$  42, 20 and 11 kg/mm<sup>2</sup>,  $\delta$  45, 43 and 36% at 20, 600 and 800° respectively; in the cold worked state  $\sigma_b$  79 kg/mm<sup>2</sup>,  $\delta$  2% at 20°,  $\rho$  at 20, 600 and 800° 0.174, 0.462 and 0.518 ohm·mm<sup>2</sup>/m respectively,  $T_{recr}$  600°. The rate of evaporation of the activator (in mg·cm<sup>2</sup>/hr) in a vacuum of  $1 \cdot 10^{-7}$  mm hg is  $1.5 \cdot 10^{-8}$  at

1/2

USSR

Nam, B. P., D'yakov, I. G., Ivanov, V. I., Pozdnyakov, V. V., Rezontov, B. I.,  
Gorbul'skiy, L. F., USSR Author's Certificate Number 358397, Filed 23/07/70,  
Published 18.01/73.

750°,  $1.7 \cdot 10^{-7}$  at 840°,  $2.7 \cdot 10^{-6}$  at 930° and  $8.3 \cdot 10^{-6}$  at 1000°.

2/2

- 84 -

USSR

UDC 669.245'27'296:669.018.2:669.018.6

NAM, B. P., D'YAKOV, I. G., POZDNYAKOV, V. V., REZONTOV, B. I., and IVANOV, V. I.

"Preparation of Vacuum-Melted Ni-W-Zr Alloys for Oxide Cathode Bases and Their Investigation in Experimental Instruments"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Engineering. Collection of Scientific and Technical Works on Materials), 1970, vyp. 2, pp 9-15 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 I857 by the authors)

Translation: The authors describe the preparation of Ni-W-Zr alloys with impurity content  $\leq 0.05\%$  intended for use as oxide cathode bases of electric vacuum devices. Some physical and mechanical properties of the alloys under study are presented, as well as test results of the alloys in experimental diodes. From the standpoint of assuring stable protracted operation of an oxide cathode, the alloy Ni + 4%W + (0.06-0.1)%Zr possesses the best properties. This alloy has a high recrystallization temperature and high strength at operating temperatures.

1/1

- 47 -

USSR

UDC 536.53

D'YaKOV, O. P.

"A Device for Multipoint Temperature Monitoring"

USSR Author's Certificate, Class G Ol k 7/19, No 335553, filed 5 Oct 70, published 16 May 72 (from RZh-Avtomatika Telemekhanika i Vychislitel'naya Tekhnika No 3, Mar 73, Abstract No 3,A402 P)

Translation: A device is proposed for multipoint temperature monitoring. The device contains a controller and temperature sensors, connectable by transistor switches through measuring circuits; a blocking oscillator; and a distributor of control pulses, which can be supplied through a transformer and amplifier to the flip-flop outputs. To improve the accuracy of monitoring, the device is equipped with a supplementary temperature controller. The midpoint of the controller is connected to the primary winding of a transformer, and the outputs of the distributor are connected through pulse stretchers to an unlocking transistor switch circuit and through uncoupling diodes to a locking transistor switch connected to the midpoint of the controller.

1/1

- 8 -

USSR

UDC: 621.316.721

LYSENKO, A. P., KUDRYAVTSEV, V. P., D'YAKOV, O. P., and NOVIKOV, I. V.

"Current Stabilizer"

USSR Author's Certificate No 296251, filed 3 Nov 69, published 14 Apr 71 (from RZh-Avtomatika, telemekhanika i vychislitel'naya tekhnika, No. 12, 1971, Abstract No 12A184P)

Translation: A current stabilizer is proposed, containing a sensitive element, a reference signal source, as well as a comparator and an activating device. In order to improve the accuracy and speed, it uses as a sensitive element a "current-frequency" converter; and as the comparator, a frequency-comparison device and counter, while it uses a controlled voltage divider as the activating device. The output of the controlled divider is connected to the input of the "current-frequency" converter; the output of the latter is connected to the input of the frequency-comparison device, the second output of which is tied to the output of the reference signal source; while the output of the frequency comparator is joined through the counter to the input of the controlled voltage divider. Resume.

1/1

- 15 -

USSR

UDC 669.046.5

SOKOLOV, G. A., SERGEYEV, A. G., TSYKIN, L. V., ZAVRAZHIN, V. D.,  
VERKHOVTSSEV, E. V., VASIL'YEV, N. Ye., and D'YAKOV, S. I.

"The Effect of Vacuum-Slag and Two-Fold Slag Treatments on Electrical Steel Quality"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISIIS). (Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys) Izd-vo "Metallurgiya," No 61, 1970, pp 212-213

Translation of abstract: The effect of various outside-furnace steel treatments on desulfurization, contamination by nonmetallic impurities, and mechanical properties of various steels is considered. Data are given on the improvement of mechanical properties of structural alloy steels. 1 table.

1/1

USSR

UDC 616.927-07

D'YAKOV, S. I., Col Med Serv, Docent

"Express Diagnosis of Typhoid and Paratyphoid by the Immuno-fluorescence Method"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 7, 1971, pp 55-59

Abstract: A two-stage procedure is proposed for examining feces, urine, and duodenal contents from typhoid and paratyphoid patients and from carriers. The first stage calls for microscopic examination, using the fluorescent antibody method. This is followed by examination of the same specimens and blood (briefly cultured on liquid or solid nutrient media). Microscopy of smears is combined (especially in the case of feces) with indirect staining to permit identification of the typhoid and paratyphoid agents not only from O and K but also H antigens. The first stage produces a positive reading within 45 to 60 min if the specimens contain fairly high concentrations of the agent. The results of the second stage are available in 5 to 20 hours even when the agent is present in low concentrations.

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USSR

D'YAKOV, S. I., Voyenno-Meditsinskiy Zhurnal, No 7, 1971,  
pp 55-59

At the same time that the agent is being isolated, it is possible  
to determine its sensitivity to antibiotics and phage.

2/2

- 37 -



USSR

UDC 577.391:612.119:636.7

TKACH, V. K., DYAKOV, V. A., and SUKHORUKOV, B. Z., Vinnitsa Medical Institute  
imeni N. I. Pirogov

"Comparative Studies of the Elastic Properties of Monomolecular Layers of  
Serum Proteins and the Morphological Indexes of the Blood of Dogs in Cases  
of Acute Radiation Sickness"

Moscow, Radiobiologiya, Vol 12, No 1, Jan/Feb 72, pp 110-114

Abstract: A study was made of the serum proteins and blood count of 32  
dogs x-rayed with 100, 350, and 700 r. In dogs that died, the elastic  
properties of proteins and the leukocyte and erythrocyte counts decreased  
rapidly until time of death. In dogs that survived, these indexes reached  
minimum values by the 15th-20th day and continued to improve. Comparative  
studies revealed that a smaller dose (100 r) has less lasting effects.  
Changes in the elastic properties of monomolecular layers, which are complex  
and phasic, were less significant than changes in the blood, i.e., the  
elasticity of proteins is more radioresistant and recovers more rapidly. Since  
changes in proteins begin very soon after irradiation (within the first hours  
to the first day), however, they can be used to determine molecular and  
structural shifts caused by radiation.

1/1

- 20 -

1/2 GC6 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--OSCILLOPOLAROGRAPHIC CHARACTERISTICS OF ARSENIC, III -U-  
AUTHOR--(04)-DYAKOVA, A.P., KHARIN, A.N., LOMAKINA, T.P., DYAKOV, V.I.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 917-20  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ARSENIC, POLAROGRAPHY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3001/0436 STEP NO--UR/0080/70/043/004/0917/0920  
CIRC ACCESSION NO--AP0126189  
UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126189

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OPTIMAL CONDITIONS FOR  
OBTAINING AN OSCILLOPOLAROGRAPH OF AS(III) WITH 0.004N (NH SUB4) SUB2 SO  
SUB4 WERE: INITIAL POTENTIAL MINUS 1.3 V, PEAK POTENTIAL MINUS 1.79 V,  
RATE OF APPLYING POTENTIAL 1 V-SEC, STOPS 7 SEC, AND PH 7. THE ESTD.  
RELATIVE ERROR IN DETN. OF 1.3 TIMES 10 PRIME NEGATIVE5-2 TIMES 10 PRIME  
NEGATIVE4 G-ION AS-L. WAS PLUS OR MINUS 2PERCENT.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--11DEC70  
TITLE--OSCILLOPCLAFGRAPHIC DETERMINATION OF THE COMPOSITION OF NICHROME  
FILMS SPRAYED ON A SOLID SUBSTRATE IN VACUO -U-  
AUTHOR--(04)-DYAKOVA, A.P., SEMYACHKO, G.YA., KHARIN, A.W., DYAKOV, V.I.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3), 593-6  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--POLAROGRAPHIC ANALYSIS, NICKEL, CHROMIUM, METAL COATING,  
CHEMICAL ANALYSIS, NICHROME ALLOY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3004/C954 STEP NO--UR/0080/70/043/003/0593/0596  
CIRC ACCESSION NO--AP0131539  
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0151539

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. NICHROME FILM SAMPLE WAS DISSOLVED IN 5-7 ML HCL WITH HEATING AND THE SOLN. WAS EVAPD. THE OSCILLOPCLAROGRAPHIC ANAL. WAS PERFORMED IN A 1 M NH SUB4 CL PLUS 1M NH SUB4 OH BUFFER; THE INITIAL VOLTAGE WAS NEGATIVE 0.7 V FOR NI AND NEGATIVE 1.3 V FOR CR. O WAS REMOVED BY N BUBBLING. THE ERROR WAS PLUS OR MINUS 3PERCENT. FACILITY: TAGANROG. RADIOTEKH. INST., TAGANKOG, USSR.

UNCLASSIFIED

1/2 012

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--INHIBITION OF ALPHA CHYMOTRYPSIN BY ISOAMYL CHLOROMETHYL KETONE -U-

AUTHOR--(02)-BOTVINIK, M.M., DYAKOV, V.L.

COUNTRY OF INFO--USSR

SOURCE--BEIKHIMIYA 1970, 35(1), 27-30

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TRYPSIN, ENZYME ACTIVITY, INHIBITION, CHLORINATED ORGANIC  
COMPOUND, KETONE, HYDROGEN ION CONCENTRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1988/0009

STEP NO--UR/0218/70/035/001/0027/0030

CIRC ACCESSION NO--AP0105109

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105109

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. ISOAMYL CHLOROMETHYL KETONE INHIBITED ALPHA CHYMOTRYPSIN BY 97PERCENT WHEN N,CARBOBENZOXY,DL,PHENYLALANINE P,NITROPHENYL ESTER WAS SUBSTRATE AND 92.3-95.2PERCENT WHEN P,NITROPHENYL ACETATE WAS SUBSTRATE AT PH 7.7; NO SUCH INHIBITION WAS OBSD. AT PH 5.0. FURTHER EXPTS. INDICATED THAT INACTIVATION BY KETONE RESULTED FROM ALKYLATION OF THE IMIDAZOLE RING OF THE HISTIDINE-57 RESIDUE. PHENOXYMETHYL CHLOROMETHYL KETONE WAS AS ACTIVE AN INHIBITOR OF ALPHA CHYMOTRYPSIN AS ISOAMYL CHLOROMETHYL KETONE, WHEREAS L,1,TOSYLAMIDO,2,PHENYLETHYL CHLOROMETHYL KETONE WAS PRACTICALLY INACTIVE. FACILITY: LAB. BIOORG. CHEM., MOSCOW STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 547.245 + 543.422.4

D'YAKOV, V. M., VORONKOV, M. G., SIDORKIN, V. F., D'YAKOVA, T. L., and ORLOV, N. F., Irkutsk Institute of Organic Chemistry, Siberian Branch of the Academy of Sciences USSR

"PMR Spectra and the Structure of Trialkylsilyl Esters of Aroylphosphonic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 7, Jul 73, pp 1535-1539

Abstract: PMR spectra of bis(triethylsilyl)aroylphosphonates --  $p\text{-XC}_6\text{H}_4\text{COP(0)[OSi(C}_2\text{H}_5)_3]_2$  -- were studied. The data obtained from the PMR and IR-spectral analyses were compared with the calculated results of the distribution of electronic density by the method of SSP MO LKAO (PPP). No satisfactory correlation was observed between the chemical shifts of aromatic protons and the Hammett  $\sigma$ -constants in the investigated series of compounds. Anomalous behavior was noted for p-halogen substituted derivatives for which a mechanism has been proposed for the reaction of the halogen substituent with the reactive center.

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- 47 -



USSR

UDC 541.124:542.938:547.1'118:547.1'128

D'YAKOV, V. M., VORONKOV, M. G., ORLOV, N. F., Irkutsk Institute of Organic Chemistry of the Siberian Department of the USSR Academy of Sciences and the Leningrad Technological Institute imeni Lensovet

"Mechanism of the Hydrolysis of Trialkylsilyl Esters of Phosphorus Oxy Acids"

Moscow, Izvestiya Akademii Nauk SSR -- Seriya Khimicheskaya, No 11, 1972, pp 2484-2488

Abstract: A study was made of the hydrolysis of the absolute and acid trialkylsilyl esters of phosphorus acids of the  $(R_3SiO)_3P$  and  $(R_3SiO)_2PHO$  type and aroylphosphonic acids of the  $XC_6H_4CNP(O)(OSiR_3)_2$  type (V. M. D'yakov, et al., Kremniyorganicheskiye materialy, Nauka, Leningrad, 139, 1971). In order to establish the hydrolysis mechanism  $H_2^{18}O$  with different contents of tagged oxygen was used. By the reaction with  $H_2^{18}O$  it was found that during neutral and acid hydrolysis of trialkylsilyl esters of the tri and quadruple-coordinated phosphorus atom there is predominant breaking of the Si-O bond in the P-O-Si and P(O)-O-Si groups. The experimental procedures and results are presented for the hydrolysis of tris(triethylsilyl)phosphite, bis(triethylsilyl)phosphite and bis(triethylsilyl)o-methylbenzoylphosphonate. 1/

- 54 -

USSR

UDC: 547.245

DYAKOV, V. M., MARMUR, I. Z., VORONKOV, M. G., ORLOV, N. F., Leningrad  
Institute of Light Industry and the Textile Industry imeni S. M. Kirov;  
Irkutsk Institute of Organic Chemistry, Siberian Department of the Academy  
of Sciences of the USSR; Leningrad Technological Institute imeni Lensovet

"Alcoholysis and Silanolysis of Trialkyl Silyl Derivatives of Phosphorous  
and Hypophosphorous Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 6, Jun 72, pp 1291-1295

Abstract: The authors investigated the alcoholysis and silanolysis of tris  
(trialkylsilyl) phosphites, bis(trialkylsilyl) phosphites, bis(trialkylsilyl)  
hypophosphites and trialkylsilyl hypophosphites. Alcoholysis of trialkylsilyl  
derivatives of phosphorus acids takes place with the formation of trialkyl-  
alkoxysilane and the corresponding acids or their partial trialkylsilyl  
derivatives. A silyl exchange reaction takes place when lower trialkylsilyl  
derivatives of a phosphorous acid are reacted with a higher trialkylsilanol.  
At the same time, under certain conditions, partial derivatives of phosphorous  
acid and hexaalkyldisiloxane are formed. Trialkyl phosphites and dialkyl phos-  
phites did not react under the experimental conditions. Hydrolysis of trial-  
kylsilyl derivatives of hypophosphorous acid yielded hypophosphorous acid and  
hexaalkyldisiloxane.

1/1

USSR

UDC: 547.26'118

D'YAKOV, V. M., GUSAKOVA, G. S., POKROVSKII, Ye. I., and D'YAKOVA, T. L.,  
Leningrad Institute of Textile and Light Industry imeni S. M. Kirov and the  
Institute of High-Molecular Compounds, Academy of Science SSSR

"Structure and IR Spectra of Para- and Ortho-Substituted Benzoylbis(triorgano-  
siloxy)phosphonates"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 5, May 1971, pp 1035-1040

Abstract: A study was made of the IR spectra of the new organosilicon-  
phosphorus compounds of the type  $\text{XC}_6\text{H}_4\text{COP(=O)(OSiR}_3)_2$  containing various substit-  
uents in the ortho- and para-positions. Correlations were discovered between  
the frequency shift in the vibrations of the C=O group with the Hammett's  
constant, and the P=O group with induction constants of substituents.

1/1

USSR

UDC: 621.396.6-181.5

BAZHENOV, V. K., D'YAKOV, V. V., PRESNOV, V. A.

"Voltage-Capacitance Characteristics of a Metal-Dielectric-Semiconductor Capacitor With Deep Centers"

Elektron. tekhnika. Nauch.-tekhn. sb. Poluprovodn. pribory (Electronic Technology. Scientific and Technical Collection. Semiconductor Devices), 1970, vyp. 5(55), pp 17-22 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V194)

Translation: The authors study the voltage-capacitance characteristics of MDS structures with deep acceptor and donor centers in the semiconductor layer. Resumé.

1/1

USSR

AKHMANOV, S. A., D'YAKOV, Yu. Ye., PAVLOV, L. I. (Moscow State University)  
"Statistical Phenomena in Stimulated Raman Emission Excited by Broad-Band  
Optical Pumping"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, February 1974,  
pp 520-536

Abstract: Results of a theoretical and experimental investigation of stimulated scattering in the field of an optical noise pump are presented. A complete theoretical description of the phenomenon is presented in the approximation of a prescribed Gaussian noise pumping field. Coherent and incoherent scattering modes and the transition region between them are investigated in detail. The increments, correlation functions, and Stokes radiation and optical phonon spectra are calculated for arbitrary relations between the pumping correlation time ( $\tau_k$ ), dephasing time  $T_2$ , and characteristic group delay time  $T_3$ . It is shown that in many cases of practical interest noise pumping may be at least as effective as harmonic pumping with the same mean intensity. The feasibility of generation of very monochromatic optical phonons (spectral line width  $\Delta\nu_Q \ll \Delta\nu_0 = (\pi c T_2)^{-1}$ ) in an optical noise field is noted. The theoretical conclusions are verified experimentally

- 43 -

USSR

AKHMANOV, S. A., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, February 1974, pp 520-536

by studying induced Raman emission in liquid nitrogen excited by a wide-band optical noise source. The possibility of obtaining effective scattering in an essentially nonquasistatic mode (for  $\tau_k \ll T_2$ ,  $\tau_k \ll T_3$ ) is demonstrated. Spectral and energy measurements are performed which are compared with theory. The results can be employed for analyzing various types of scattering and such problems as decay instabilities in a plasma, etc.

2/2

USSR

AKHMANOV, S. A. and DYAKOV, YU. YE., Moscow State University imeni M. V. Lomonosov

"Saturation Effects During the Induced Raman Emission and Resonant Absorption (Intensification) of a Strong Nonmonochromatic Field"

Moscow, Pis'ma v (Letters to) Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 20 October 1973, pp 519-522

Abstract: Consideration is given to induced Raman emission in a field of strong optical noise, with account taken of saturation effects. There is a discussion of a new mode of intense transfer of the energy of wide-band pumping light into a harmonic Stokes signal. For an analysis of the nonlinear effects originating with the interaction of noncoherent light with quantum systems, an approach is proposed which is analogous to the Dyson-equation technique in the theory of waves in turbulent media, generalized for nonlinear problems. 1 figure, 11 references.

1/1

USSR

D'YAKOV, YU. YE. and PAVLOV, L. I.

UDC 621.375.7

"Parametric Amplification of Light in the Pumping Field"

V sb. Nelineyn. protsessy v optike (Nonlinear Processes in Optics -- collection of works), Vyp.2, Novosibirsk, 1972, pp 367-376 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 D196)

Translation: None.

1/1



USSR

AKHMANOV, S. A., D'YAKOV, Yu. Ye.

UDC 621.375.82

"Parametric Amplification in a Noise Pumping Field"

V sb. Nelineyn. protsessy v optike (Nonlinear Processes in Optics--collection of works), Vyp. 2, Novosibirsk, 1972, pp 346-353 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D887)

Translation: A theoretical study was made of the effect of the nonmonochromaticity of a pumping field on the parametric amplification of the waves in a medium with quadratic nonlinearity under conditions in which the length of the amplification region  $L \gg l_0$  -- the characteristic length of the parametric amplification ( $l_0 = 1/\Delta v_0 \Delta n$ , where  $\Delta v_0$  is the width of the pumping spectrum,  $\Delta n$  is the group detuning of the interaction waves). Under conditions in which  $\Delta v_p$  exceeds the threshold value  $\Delta v_{\text{thresh}}$ , the parametric amplification will depend on the spectral pumping density. The increment of the signal wave in this case is proportional to the spectral density of pumping and inversely proportional to the dispersion of the group pumping rates and the free wave. Evaluation of  $\Delta v_{\text{thresh}}$  indicates that  $\Delta v_{\text{thresh}}$  increases with an increase in spectral density of the pumping. It is indicated that parametric processes with sufficiently powerful incoherent sources with high spectral density can take place with an efficiency not less than the efficiency in the case of a coherent pumping source.

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041  
UNCLASSIFIED  
PROCESSING DATE--04DEC70  
TITLE--EXCITATION OF STIMULATED SCATTERING OF LIGHT BY BROAD SPECTRUM  
PUMPING -U-  
AUTHOR--DYAKOV, YU.YE.  
COUNTRY OF INFO--USSR  
SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(7), 362-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--LIGHT EXCITATION, EXCITATION ENERGY, LIGHT SCATTERING,  
SIMULATION, OPTIC PUMPING, RAMAN SCATTERING, LINE WIDTH  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3002/0111  
CIRC ACCESSION NO--AP0127737  
STEP NO--UR/0386/70/011/007/0362/0365  
UNCLASSIFIED

272 041  
CIRC ACCESSION NO--AP0127737  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT. THE USE OF BROAD SPECTRUM PUMPING (THE PUMPING BAND,  $\Delta W$  SUBL MUCH GREATER THAN THE SPONTANEOUS SCATTERING BAND,  $\Delta S$  SUBO) FOR OBTAINING STIMULATED MANDELSTAM-BRILLOUIN (MBS) OR RAMAN SCATTERING OF LIGHT WAS STUDIED. A DIFUSSE CHARACTER OF THE PUMPING SPECTRUM, CONNECTED WITH A FINITE DURATION OF ITS PULSE, IS CONSIDERED INSIGNIFICANT. THE LINEWIDTH OF THE STOKES COMPONENT IS SIMILAR TO  $\Delta W$  SUBL. THE SPECTRUM OF THE ACOUSTIC COMPONENT REMAINS NARROW; IT ENABLES ONE TO MEASURE, IN THE CASE OF MBS, THE SUPERSONIC VELOCITY BY SPECTRAL METHODS WITH THE SAME PRECISION AS AT  $\Delta S$  SUBL MUCH SMALLER THAN  $\Delta S$  SUBO.

UNCLASSIFIED

1/2 CC6 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--OSCILLOPOLAROGRAPHIC CHARACTERISTICS OF ARSENIC, III -U-  
AUTHOR--(04)--DYAKOVA, A.P., KHARIN, A.N., LOMAKINA, T.P., DYAKOV, V.I.  
COUNTRY OF INFO--USSR  
SOURCE--Zh. Prikl. Khim. (Leningrad) 1970, 43(4), 917-20  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ARSENIC, POLAROGRAPHY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3001/0436 STEP NO--UR/0080/70/043/004/0917/0920  
CIRC ACCESSION NO--AP0126189  
UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126189

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT.

THE OPTIMAL CONDITIONS FOR

OBTAINING AN OSCILLOPOLAROGRAPH OF AS(III) WITH 0.004N (NH SUB4) SUB2 SO

SUB4 WERE: INITIAL POTENTIAL MINUS 1.3 V, PEAK POTENTIAL MINUS 1.79 V,

RATE OF APPLYING POTENTIAL 1 V-SEC, STOPS 7 SEC, AND PH 7. THE ESTD.

RELATIVE ERROR IN DETN. OF 1.3 TIMES 10 PRIME NEGATIVE5-2 TIMES 10 PRIME

NEGATIVE4 G-ION AS-L. WAS PLUS OR MINUS 2PERCENT.

UNCLASSIFIED

1/2 023  
UNCLASSIFIED  
TITLE--OSCILLOSCOPIGRAPHIC DETERMINATION OF THE COMPOSITION OF NICHROME  
FILMS SPRAYED ON A SOLID SUBSTRATE IN VACUO -U-  
AUTHOR-(04)-DYAKOVA, A.P., SEMYACHKO, G.YA., KHARIN, A.N., DYAKOV, V.I.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3), 593-6  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--OSCILLOGRAPHIC ANALYSIS, NICKEL, CHROMIUM, METAL COATING,  
CHEMICAL ANALYSIS, NICHROME ALLOY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3004/0954  
STEP NO--UR/0080/70/043/003/0593/0596  
CIRC ACCESSION NO--AP0131539  
UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--11DEC70  
CIRC ACCESSION NO--AP0131539  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NICHROME FILM SAMPLE WAS DISSOLVED  
IN 5-7 ML HCL WITH HEATING AND THE SOLN. WAS EVAPD. THE  
OSCILLOPCLAROGRAPHIC ANAL. WAS PERFORMED IN A 1 M NH SUB4 CL PLUS 1M NH  
SUB4 OH BUFFER; THE INITIAL VOLTAGE WAS NEGATIVE 0.7 V FOR NI AND  
NEGATIVE 1.3 V FOR CR. O WAS REMOVED BY N BUBBLING. THE ERROR WAS  
PLUS OR MINUS 3PERCENT. FACILITY: TAGANROG. RADIOTEKH. INST.,  
TAGANROG, USSR.

UNCLASSIFIED

USSR

UDC 669.295:620.176.251.1:620.186.1

D'YAKOVA, M. A., BOGACHEV, I. N., BEZRUKOVA, A. K., and SELITSKAYA, S. I.,  
Ural Polytechnical Institute

"Phase Conversions of Titanium Alloys at Low Temperatures"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1970,  
pp 36-38

Abstract: A study was made of the decomposition of the unstable  $\beta$ -solid solution of titanium alloys during cooling and plastic deformation at low temperatures. Two alloys were studied: one with 3.7% Al, 7.5% Mo (alloy A) with a temperature of beginning of martensite conversion of +50°C, and the other with a high content of the transitional elements (alloy B) with a temperature of beginning of martensite conversion of below -196°C. Exposure to cold increases the strength properties of both types of alloys. Plastic deformation at low temperatures results in the formation of deformation martensite and increases the yield point and ultimate strength.

1/1

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USSR

UDC 547.245 + 543.422.4

D'YAKOV, V. M., VORONKOV, M. G., SIDORKIN, V. F., D'YAKOVA, T. L., and ORLOV, N. F., Irkutsk Institute of Organic Chemistry, Siberian Branch of the Academy of Sciences USSR

"PMR Spectra and the Structure of Trialkylsilyl Esters of Aroylphosphonic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 7, Jul 73, pp 1535-1539

Abstract: PMR spectra of bis(triethylsilyl)aroylphosphonates --  $p\text{-XC}_6\text{H}_4\text{COP(0)[OSi(C}_2\text{H}_5)_3]_2$  -- were studied. The data obtained from the PMR and IR-spectral analyses were compared with the calculated results of the distribution of electronic density by the method of SSP MO LKAO (PPP). No satisfactory correlation was observed between the chemical shifts of aromatic protons and the Hammett  $\sigma$ -constants in the investigated series of compounds. Anomalous behavior was noted for p-halogen substituted derivatives for which a mechanism has been proposed for the reaction of the halogen substituent with the reactive center.

1/1

- 47 -

USSR

UDC: 547.26'118

D'YAKOV, V. M., GUSAKOVA, G. S., POKROVSKII, Ye. I., and D'YAKOVA, T. L.,  
Leningrad Institute of Textiles and Light Industry imeni S. M. Kirov and the  
Institute of High-Molecular Compounds, Academy of Science SSSR

"Structure and IR Spectra of Para- and Ortho-Substituted Benzoylbis(triorgano-  
siloxy)phosphonates"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 5, May 1971, pp 1035-1040

Abstract: A study was made of the IR spectra of the new organosilicon-  
phosphorus compounds of the type  $\text{XC}_6\text{H}_4\text{COP(=O)(OSiR}_3)_2$  containing various substituents in the ortho- and para-positions. Correlations were discovered between the frequency shift in the vibrations of the C=O group with the Hammett's constant, and the P=O group with induction constants of substituents.

1/1

Therapy

USSR

POSPELOVA, V. V., RAKHIMOVA, N. G., KOROLEVA, A. I., D'YAKOVA, Ye. I.,  
KURNOSOVA, N. A., and SMIRNOV, G. V., Moscow Scientific Research Institute of  
Epidemiology and Microbiology

"New Forms of Kolibakterin -- a Preparation for Nonspecific Prophylaxis and  
Therapy of Intestinal Infections"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 6, 1970, pp 48-49

Abstract: Kolibakterin is a preparation of live bacteria of antagonistic E. coli M-17 strain. It has been used fairly successfully as a drug for nonspecific prophylaxis and therapy of acute dysentery and chronic colitis, and for the restoration of the normal intestinal microflora in various bacterial diseases. However, the form in which it was available -- a loose mass in vacuum ampules -- made tedious weighing and dissolving of individual doses necessary. Furthermore, the bacteria were partly destroyed in the stomach by hydrochloric acid. Early attempts to press the mass into tablets were unsuccessful, since the biological activity of the preparation rapidly decreased. A new method of obtaining kolibakterin in dry form and pressing it into tablets or packing it into gelatin capsules has been developed. Preliminary tests have shown that both the tablets and the capsules are as effective as the original preparation. The next step is to mechanize the procedure and to use acid-resistant capsules.

1/1

USSR

UDC 577.1:615.7/9

KRAYVALIS, K. I., KYAESHULIS, A. A., and DYASHRYUS, A. P.

"The Effect of Some Neurotropic Substances on Total Toxicity and Antitumor Activity of B-66 and B-67 Preparations"

Vil'nyus, Liet, TSR Mokslu Akad. darbai, Tr. AN LitSSR (Proceeding of the Academy of Sciences Lithuanian SSR), Vol B, No 1 (57), 1972, pp 123-129 (from Referativnyy Zhurnal -- Biologicheskaya Khimiya, Otdel'nyy Vypusk, No 19, 1972, Abstract No 19F2061 by N. Androyeva)

Translation: A combined intraperitoneal application of 75-100 mg/kg of preparation B-66 (*N*-[2-di-(2'-chloroethyl)amino-4-diethylsulfamoylphenyl]morpholine (I) suspended in vegetable oil and 25 and 35 mg/kg of B-67 (6-diethylsulfamoyl-4-(2'-chloroethyl)-1,2,3,4-tetrahydroxoxalin-1-spiro-4-morpholinium chloride (II) in isotonic NaCl solution with 6 mg/kg of aminazin (III), 20 mg/kg of dicoline (IV), 40 mg/kg of spasmolytin (V), and 30 mg/kg of amizyl (VI) for 10 days did not influence the growth of sarcoma in 45 white mice. Preparations were administered 6 days after inoculation of mice with sarcoma. Compound III increased considerably the toxicity of I and II; and compound IV increased the toxicity of II. The toxicity of II decreased because of V; and VI did not altered the toxicity of I and II.

1/1

USSR

UDC 542.91:547.413

BEKKER, R. A., ASRATYAN, G. V., LUR'YE, E. P., and DYATKIN, B. L., Institute of Metal Organic Compounds, Academy of Sciences USSR

"Synthesis of Fluoroolefines by the Reaction of Polyfluorochlorocarinols With Phosphorus Pentasulfide"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, May 73, p 1159

Abstract: Reaction of polyfluorochlorocarinols with  $P_2S_5$  leads to the formation of fluoroolefines: 1,3,3-trichloro-2-methylperfluoropropanol-2 yields 1-fluoro-1,1-dichloro-2-(difluorochloromethyl)propene, b.p.  $120^\circ$ , and 1,3-dichloro-2-phenylperfluoropropanol-2 yields  $\alpha$ -(difluorochloromethyl)- $\beta,\beta$ -difluorostyrene, b.p.  $82^\circ/40\text{mm}$ .

1/1

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1/2 014  
UNCLASSIFIED  
PROCESSING DATE--23OCT70  
TITLE--SYNTHESIS OF PERFLUOROALKYL MERCURY DERIVATIVES VIA PERFLUOROALKYL  
CARBANIONS -U-  
AUTHOR--(04)-DYATKIN, B.L., STERLIN, S.R., MARTYNOV, B.I., KNUNYANTS, I.L.  
COUNTRY OF INFO--USSR  
SOURCE--TETRAHEDRON LETT. 1970, (17), 1387-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--FLUORINATED ORGANIC COMPOUND, MERCURY COMPOUND, CHLORIDE,  
ORGANOMERCURY COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/0764  
STEP NO--UK/0000/70/000/017/1387/1388  
CIRC ACCESSION NO--AP0124434  
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0124434

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FLUORODIFINS OF SUB3 CR:CF SUB2  
(R EQUALS F AND CF SUB3), ARE TREATED WITH HGCL SUB2 IN THE PRESENCE OF  
KF IN HCONME SUB2 TO GIVE BIS(PERFLUOROISOPROPYL)MERCURY AND  
BIS(PERFLUORO,TEKT,BUTYL)MERCURY. PERFLUOROISOPROPYL MERCURY CHLORIDE  
IS PREPD. FROM CF SUB3 CF:CF SUB2, HGCL SUB2, AND KF IN MEQCH SUB2 CH  
SUB2 OME.  
FACILITY: INST. ORG. ELEM. COMP., MOSCOW, USSR.

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112405

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. A REVIEW, THROUGH PART OF 1969 OF  
THE ELECTRONIC AMPHOTERIC BEHAVIOR OF FLUOROLEFINS, ORIENTATION OF  
THEIR ADDN. REACTIONS WITH UNSYM. ADDUCTS, AND BOND CONJUGATION IN  
FLUOROLEFINS WITH 64 REFS.

UNCLASSIFIED



USSR

UDC 538.113

LAREN, S. M., SOLOVHENKO, P. M., DYATKINA, M. Ye., and KOPITSYA, N. I.,  
Institute of General and Inorganic Chemistry, N. S. Kurnakov, Academy of  
Sciences USSR, and Institute of Chemistry Academy of Sciences TadzhSSR

"Study of the Superfine Structure of Ligands of Complexes in EPR Spectra.  
Communication V. Investigation of Divalent Copper Dithiophosphinates and  
Dithiophosphates"

Moscow, Zhurnal Strukturnoy Khimii, Vol 12, No 1, Jan-Feb 71, pp 20-33

Abstract: EPR spectra were taken of copper (II) diethyldithiophosphinate (I),  
diethyl dithiophosphate (II), and diisopropyl dithiophosphate (III). It has been  
shown that the radical bound to the phosphorus atom has a characteristic  
effect on EPR spectra. The spinhamiltonian parameters of (I) differed from  
those of (II) and (III) [they were identical for (II) and (III)], leading to  
the conclusion that this difference was due to the change in the immediate  
area surrounding the phosphorus atom. On the basis of experimentally deter-  
mined values for g-factors, SFS constants, and  $\Delta E$ , the NO coefficients were  
calculated and reported. The mechanism of the effect of the radical on the  
axial-symmetric spin-hamiltonian is discussed.

1/1

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1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--CALCULATIONS OF MOLECULAR ORBITAL OF COMPLEX MOLECULES. III. GROUP  
COEFFICIENTS FOR MOLECULAR INTEGRALS FOR CALCULATING SELF CONSISTENT  
AUTHOR--(03)-ROZENBERG, E.L., DOLIN, S.P., DYATKINA, M.YE.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 80-94

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CALCULATION, MOLECULAR ORBITAL, COMPLEX MOLECULE, MOLECULAR  
STRUCTURE, MATRIX ELEMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1254

STEP NO--UR/0192/70/011/001/0080/0094

CIRC ACCESSION NO--AP0128670

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70  
CIRC ACCESSION NO--AP0123670  
ABSTRACT/EXTRACT--(U) GP-G- ABSTRACT. TABLES ARE GIVEN OF GROUP COEFFS.  
AND TYPES OF APPROPRAITE MOL. INTEGRALS FOR CALCG. ALL SELF CONSISTENT  
MATRIX ELEMENTS IN MX SUB6 MOLS. OF OCTAHEDRAL STRUCTURE WITHIN THE  
FRAMES OF APPROX. METHODS OF COMPLETE OR PARTIAL DIFFERENTIAL OVERLAP.  
FACILITY: INST. OBSHCH. NEORG. KHIM. IM. KURNAKOVA, MOSCOW, USSR.

UNCLASSIFIED

I/2 008 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--APPROXIMATION METHODS FOR CALCULATING INTEGRALS CONTAINING A TWO  
CENTER DISTRIBUTION SMALLER THAN PHI SUBA PHI SUBB. II. USE OF THE  
AUTHOR--(03)--KLYAGINA, A.P., DYATKINA, M.YE., BOBRYSEVA, N.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 95-8 (RUSS)

DATE PUBLISHED-----70

SUBJECT AREAS--MATHEMATICAL SCIENCES, PHYSICS

TOPIC TAGS--APPROXIMATION METHOD, ATOMIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3002/0103

STEP NO--UR/0192/70/011/001/0095/0098

CIRC ACCESSION NO--AP0127729

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0127729

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE 4 CENTER INTEGRALS IN CALCNS. FOR COMPS. OF TRANSITION ELEMENTS WITH DISTANCES BETWEEN THE CENTERS OF LARGER THAN OR EQUAL TO 3 AT. UNITS CAN BE IGNORED. OF 2 CENTER INTEGRALS THOSE CONTG. 2 CENTER DISTRIBUTION WITH A DISTANCE BETWEEN THEM LARGER THAN 5 AT. UNITS CAN BE ALSO IGNORED. THE VALUE OF 3 CENTERED INTEGRALS INCREASES WITH THE DECREASE IN THE EXPONENT OF THE AT. FUNCTION. THE VALUES OF THREE CENTER INTEGRALS ARE LARGE ENOUGH (0.100-0.050 AT. UNITS) TO BE ACCOUNTED FOR IN CALCNS. BY THE RUTAN METHOD. FACILITY: INST. OBSHCH. NEORG. KHIM. IM. KURNAKOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 575.22

DYATLOV, A. I., Plague Institute of the Caucasus and Transcaucasia

"Epizootics and Evolution of Populations of Carriers in Natural Plague Foci"

Moscow, Ekologiya, No 6, 1972, pp 62-68

Abstract: Any group (population) of animals includes individuals comparatively resistant to plague as well as those highly sensitive to it. The differences in sensitivity, which often exceed species differences, are genetically determined by specific cellular mechanisms of protection against plague, blood groups, level of metabolism, hemoglobin concentration, etc. The variety of genetically discrete protective forces constitutes the material that in the course of evolution and as a result of epizootics gives rise to populations adapted to existence in a natural plague focus. Since plague epizootics usually destroy the susceptible individuals, the frequencies of the genes responsible for the different determinants of resistance increase in the surviving part of the population. The associated evolution of the plague microbe and of its main carriers (rodents) in natural plague foci where epizootics are very frequent and the population structure of the animal colonies is distinct tends to create mutually adapted carrier and pathogen populations. This increases the resistance of the carriers and at the same time permits the microbe to persist in the local biocenosis.

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USSR

DYATLOV, A. I., MUKHAMELOV, S. M., RIVKUS, Yu. Z., Uzbek Anti plague Station

"Natural Foci of Plague in Uzbekistan"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 4, 1971, pp 31-33

Abstract: Plague epizootics have regularly been observed in the northern and northwestern parts of the Kyzyl Kum desert in the Uzbek SSR. This region should be regarded as enzootic for plague bacteria, which are continuously being passed from one rodent to another by fleas. In other territories of the republic to the south, plague epizootics were always observed following development in principal foci, and were due to transfer of microbes in jumps over considerable distances, at times by infected wild animals. The occurrence of a focus is affected to a great extent by the number of carriers, their annual and seasonal dynamics, by climate and topography, as well as by conditions of different years. An intense epizootic flared up in Kyzyl Kum in 1969 after a four-year interval, an independent local epizootic focus occurred in 1964 in the Amu-Dar'ya delta (north Kyzyl Kum) after a 9-year interval, and a year later, after a similar interval, in a neighboring sector. Such sudden reactivations of plague foci are related to natural factors, revealing a certain independence of epizootic development. The results of the investigation demonstrate that the plague epizootic process in Kyzyl Kum is very active, necessitating systematic observation and study of particularly dangerous areas.

1/1

Navigation Aids

USSR

UDC 621.396

DYATLOV, A. P., NADTOKA, A. YE.

"Phase Direction Finder with Successive Signal Comparison"

Kiev, Izvestiya vysshikh uchebnykh zavedeniy--Radioelektronika, Vol XIV, No 8, 1971, pp 889-893

Abstract: A study was made of the possibility of using an autocorrelation receiver in a phase direction finder with successive signal comparison, and the instrument error was analyzed. The information about the spatial position of a target is to be found in the amplitude and the phase difference. Only the phase difference of the signals is considered here. The commuted signal resembles a signal with relative phase manipulation, and autocorrelation receivers are used to process the signals [Petrovich, Peredacha distoyemoy informatsii v kanalakakh s fazovoy manipulyatsiyey, Soviet Radio Press, 1965]. A block diagram of a range finder using an autocorrelation device is presented, and its operation is described.

The presented direction finder can operate not only with respect to monoharmonic signals but also with respect to continuous narrow band AM and FM

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USSR

DYATLOV, A. P., et al., Izvestiya vysshikh uchebnykh zavedeniy--Radioelektronika, Vol XIV, No 8, 1971, pp 889-893

signals. A limiter is used at the autocorrelator input when receiving AM signals in order to eliminate the error as a result of the nature of the signal. The special problems encountered here are also analyzed.

2/2

- 101 -

USSR

UDC 621.317.7:621.374.5

YEVDOKIMOV, YU. F. and DYATLOV, A. P.

"Realization of Tunable Delay Lines and Their Use in Automatic Correlators"

Tr. Taganrog. radiotekhn. in-ta (Works of the Taganrog Radio-Engineering Institute), 1972, vyp.28, pp 88-94 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 A272)

Translation: The authors study the possibility of realizing the discrete tuning of delay lines and the effect of discrete tuning on the spectrum of the signal at the delay line output. Discrete tuning is accomplished by connecting a section of the delay line between the input and the output with increasing time lag. Several methods of discrete tuning are considered. A.K.

1/1

Receivers & Transmitters

USSR

UDC 621.317.79

DYATLOV, A. P. and BONDARENKO, V. P.

"Increasing the Interference-Resistance of Correlators"

Tr. Taganrog. radiotekhn. in-ta (Works of the Taganrog Radio-Engineering Institute), 1972, vyp.28, pp 140-145 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 A248)

Translation: An essential shortcoming of multiplication correlators widely used in reception technology is their low interference resistance. As a result of this, an integral effect is observed at the output during the simultaneous action of several signals on the correlator input. The integral effect makes the separation of the useful signal difficult. An analysis is given of three methods for raising the interference resistance of multiplication correlators: 1) separation of the useful signal against a background of interfering, continuous signals; 2) separation of the continuous signal against a background of pulsed interference with a high repetition frequency; and 3) separation of signals with linear frequency modulation against a background of interfering, continuous, narrow-band signals. A.K.

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USSR

UDC: 621.317.361

DYATLOV, A. P. and YEVDOCKIMOV, Yu. F.

"Analyzing the Doppler Frequency Shift Simulator"

Kiev, Izvestiya VUZ - Radioelektronika, vol. 14, No. 5, 1971,  
pp 544-551

Abstract: The Doppler signal simulator transforms its input frequency, which may be in the high or intermediate frequency range, into some other frequency. In this process, the Doppler frequency shift is constant and independent of the input frequency. In checking the device, however, the frequency shift must be a function of the input frequency. This article analyzes a simulator which satisfies these requirements. As a substitute for the imitator, the subject of the analysis is a dispersionless delay line in which the delay varies linearly with time. Such a substitution is valid since the output of such a line is shifted in frequency with respect to the input in quasi-Doppler fashion. The authors discuss the linear tuning of the delay line, tuning the line with a sawtooth function having zero and finite retrace intervals, and the spectrum of the line's output signal with sawtooth tuning.

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1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--HIGH ENERGY SCATTERING MODEL WITH A VIOLATION OF THE POMERANCHUK  
THEOREM -U-  
AUTHOR-(04)-ANSELM, A.A., DANILOV, G.S., DYATLOV, I.T., LEVIN, YE.M.  
COUNTRY OF INFO--USSR  
SOURCE--YAD. FIZ. 1970, 11(4), 896-901  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--PARTICLE INTERACTION, ANTIPARTICLE, INTEGRAL CROSS SECTION,  
NUCLEAR MODEL, SCATTERING CROSS SECTION, ENERGY SPECTRUM, HIGH ENERGY  
PARTICLE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3007/1000 STEP NO--UR/0367/70/011/004/0896/0901  
CIRC ACCESSION NO--AP0136427  
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136427

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXAMPLES ARE PRESENTED FOR THE POSSIBLE VIOLATION OF THE THEORY OF THE EQUALITY OF THE TOTAL CROSS SECTION OF PARTICLE AND ANTIPARTICLE INTERACTIONS (I. YA. POMERANCHUK, 1958) IN MODELS BASED ON THE LOGARITHMIC DEPENDENCE OF THE INCREASE IN THE INTERACTION RADIUS WITH THE INCREASING ENERGY. THE EXAMPLES SATISFIED THE GENERAL PRINCIPLES OF THIS THEORY, I.E. THE ANALYTICITY, THE CROSSING SYMMETRY, AND UNITARITY. THE DIFFRACTIONAL MODELS WITH THE S CHANNEL PARTIAL WAVE AMPLITUDE EQUAL SIMILAR TO  $1 - \ln s$  AND THAT WITH THE TOTAL ABSORPTION AND CROSS SECTION  $\sigma_{\text{TOT}}$  SIMILAR TO  $\ln^2 s$  ARE DISCUSSED IN DETAIL. FACILITY: FIZ.-TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 621.373:533.145.6

DYATLOV, M. K., MAL'KOVA, G. I., NOVIKOVA, V. A., STEPANOV, V. A.,  
SUKHANOVA, G. A.

"Service Life of a Helium-Cadmium Laser"

Elektron. tekhnika. Nauch.-tekhn. sb. Gazorazryadn. pribory (Electronic  
Technology. Scientific and Technical Collection. Gas-Discharge Devices),  
1971, vyp. 1(21), pp 77-85 (from RZh-Radiotekhnika, No 7, Jul 71,  
Abstract No 7D134)

Translation: Processes are studied which affect the service life of a  
helium-cadmium laser with emission on a wave length of 4416 Å. It is  
shown that the principal cause for termination of the service life of  
this laser is the sorption of helium as cadmium vapor condenses from  
the discharge onto the cold sections of the discharge tube. Resumé.

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- 70 -

DYATLOV, V. I.

Statistics

28 Apr 72

105

771 CYBERNETICS

91, USSR

SPRINKLETON, L. A.

ENC 62-40

"On the Optimal Control of Statistical Processes in Machine Building"

Adaptive Systems. (Adaptive Systems. Large Systems). Moscow, Nauka, 1971, pp 168-206

Translation of abstract: This report covers general questions of automatic control over the fine adjustments of given parameters of statistical production processes in machine building. The design of an optimal algorithm is described. An example of its simulation is given.

DO FORM 860-1112 100 600 1972

1/1

STATISTICS

92, USSR

SPRINKLETON, L. A.

ENC 62-40

"Application of Statistical Methods for the Control and Analysis of Technological Processes of Semiconductor Device Production"

Adaptive Systems. (Adaptive Systems. Large Systems). Moscow, Nauka, 1971, pp 168-177

Translation of abstract: The problems discussed are related to the practical use of statistical methods for controlling and analyzing technological processes in the production of semiconductor devices. The results of an investigation of the production of silicon devices (diodes and stabilizers) are given. Contemporary methods of extremal, experimental planning were used and a system of statistical control was developed for this production.

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USSR.

UDC 8.74

DYATLOV, V. S.

"Programming Training Material for the REPETITOR MEI Computer"

Tr. Mosk. energ. in-ta (Works of Moscow Power Engineering Institute), 1972, vyp. 82, pp 38-48 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V628)

Translation: A study was made of a series of structures providing a basis for the construction of exercise programs and used to mechanize practical exercises, self-training for tests and exams and also for training exercises for backward students. The programs are described by means of information-logic structures (ILS) clearly representing the information-code content of the program frames, their mutual position on the linear carrier (movie film) and also the trajectory of the provisional transitions between frames during the process of executing fragments of the programs. The provisional transitions between the frames are denoted on the ILS by lines with arrows; in this case the arrow indicates the transition direction, and the index at the beginning of the line is the condition for which this transition is completed. A study was made of the following versions of the structures: ILS with variation of the basic problem; ILS with variation of the problem with respect to nature of

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- USSR

DYATLOV, V. S., Tr. Mosk. energ. in-ta, 1972, vyp. 82, pp 38-48

error; ILS with discussion of the dosage of new material and repetition of this material in the case of incorrect response to two questions; ILS with partial return to the question; ILS with independent selection of the motivating information by the student; ILS with modified sampling procedure for inputting the response -- "associative"; ILS with "dichotomous response."

2/2

- 73 -

USSR

UDC 547.1'118+541.124

KIREYEVA, A. Ya., ZHADANOV, B. V., SIDORENKO, V. V., and DYATLOVA, N. M.,

"Synthesis and Study of the Acid Dissociation of N-Carboxymethyl-N,N-bis(methylenephosphonic) Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 43, No 11, Nov 73, pp 2508-2511

Abstract: N-Carboxymethyl-N,N-bis(methylenephosphonic) acid  $\text{HOCH}_2\text{CN}(\text{CH}_2\text{PO}_3\text{H}_2)_2$  (I;  $\text{H}_5\text{L}$ ) was synthesized by the interaction of glycine, formalin, and phosphorous acid in the presence of HCl (cf. K. Moedritzer and R. R. Irani, J. Org. Chem., 31, 1603, 1966). The distribution of various dissociated forms of  $\text{H}_5\text{L}$  ( $\text{H}_4\text{L}^-$ ,  $\text{H}_3\text{L}^{2-}$ ,  $\text{H}_2\text{L}^{3-}$ ,  $\text{HL}^{4-}$ ,  $\text{L}^{5-}$ ) in relation to the pH at pH 1-12 was studied by IR spectroscopy. On the basis of the data obtained, a mechanism of the dissociation of I is proposed.

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USSR

UDC 547.1'118-386:543

KIREYEVA, A. YU., SHUGAL, N. P., and DYATLOVA, N. M., All Union Scientific Research Institute of Chemical Reagents and Ultra Pure Chemical Compounds

"Reaction of Trivalent Iron with Glycine-N,N-bis(methylenephosphonic) Acid"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 18, No 10, Oct 73, pp 2685-2691

Abstract: An investigation has been carried out of the complex formation of glycine-N,N-bis(methylenephosphonic) acid with iron (III). Formation of stable, water soluble, normal and hydroxylated complexes of the general composition  $Me:K = 1:1$  has been shown to take place by means of pH-metry and high frequency titration. Their stability constants have been calculated. It has been shown that the proton located on the nitrogen atom is the most basic one and dissociates last. The composition of an insoluble iron complex ( $pH < 4.5$ ) has been determined by the turbidimetric method. The structure  $H_2 FeL \cdot 3H_2O$  being proposed on the basis of IR spectrophotometric data.

Thermal stability of the solid complex has been investigated.

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USSR

UDC 546.33:547.468.32.024'212

BIKIMAN, B. I., URINOVICH, E. M., KIREEVA, A. YU., SHUGAL, N. F.,  
DYATLOVA, N. M. (All-Union Scientific Research Institute of Chem-  
ical Reagents and Especially Pure Chemical Substances (IREA))

"Study of Hydroxyethylindenediphosphonic Acid and Its Sodium Salt"

Moscow, Zhurnal Neorganicheskoi Khimii, vol 18, No 9, Sept 1973,  
pp 2406-2409

Abstract: The trisodium salt of hydroxyethylindenediphosphonic acid was prepared by adding NaOH to an aqueous solution of the free acid (synthesis of acid is referenced) in distilled water, cooled by ice. Chemical analysis of the salt verified its elemental composition, and IR absorption spectra confirmed the structure of the free acid and the salt. Potentiometric titration showed two protons in the salt and five in the acid. The acid loses its water of crystallization ( $0.5 \text{ H}_2\text{O}$ ) in one step at  $76^\circ\text{C}$ , while the salt loses 2 molecules at  $116^\circ\text{C}$  and the other 2.5 at  $190^\circ\text{C}$ . In aqueous solution the salt has a neutral pH and is recommended as a complexing agent at this pH.

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USSR

UDC 542.91 + 541.49 + 661.718.1

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DYATLOVA, N. M., MEDVED', T. YA., RUDOMINO, M. V. and KABACHNIK, M. I., Institute of Organo-Elemental Compounds, Moscow, Academy of Sciences, USSR, and Institute of Chemical Reagents and Ultrapure Materials, State Committee for Chemistry

"Synthesis and Complexing Properties of Ethylenediaminobisarylmethylphosphinic Acids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, Vol 4, Apr 70, pp 815-819

Abstract: The acids were obtained by condensation of monoethylester of methylphosphinic acid with Schiff bases of ethylenediamine and aromatic aldehydes in the presence of catalytic amounts of sodium ethoxide. With benzaldehyde, the ethyl ester of ethylenediaminobisbenzylmethylphosphinic acid is obtained as a dihydrochloride, which can be converted to the free acid by thermal self-saponification. When salicylaldehyde is used, the free acid is obtained directly. The yields were 42 and 20% respectively. Both acids are colorless crystalline compounds insoluble in water or organic solvents, soluble in dilute acids and bases. Analysis of three types  
1/2

USSR

DYATLOVA, N. M., et al, Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, Vol 4, Apr 70, pp 815-819

of materials, containing phosphinic, phosphonous and phosphonic groups showed that phosphonic groups exhibit strongest complexing properties. It was determined that ethylenediaminobis-o-hydroxy-benzylmethylphosphinic acid may be used for spectrophotometric determination of titanium (IV).

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1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--SYNTHESIS AND COMPLEXING PROPERTIES OF ALPHA, LPHA PRIME N, N  
PRIME, ETHYLENEDIAMINEBIS ALPHA ARYLMETHYLPHOSPHINIC ACIDS -U-  
AUTHOR-(04)-DYATLOVA, N.M., MEDVED, T.YA., RUDOMINO, M.V., KABACHNIK, M.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (4), 815-19

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC SYNTHESIS, COMPLEX COMPOUND, SCHIFF BASE,  
ETHYLENEDIAMINE, ORGANIC PHOSPHORUS COMPOUND, THERMAL DECOMPOSITION,  
COPPER COMPLEX, NICKEL COMPLEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3006/1474

STEP NO--UR/0062/70/000/004/0815/0819

CIRC ACCESSION NO--AP0135143

UNCLASSIFIED



2/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70  
 CIRC ACCESSION NO--AP0135143  
 ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. HEATING 9.05 G SCHIFF BASE (PREPD. BY HEATING (CH SUB2 NH SUB2) SUB2 AND BZH AT 60DEGREES) WITH 8.3 G ME(0)(H)OET IN N ATM. 1.5 HR AT 70DEGREES IN THE PRESENCE OF A CATALYTIC AMT. ETONA ETCH GAVE AFTER TREATMENT AT 0DEGREES WITH DRY HCL IN DRY ET SUB2 O, 47.4PERCENT (CH SUB2 NHCHPHP(0), ME(OET)) SUB2.2HCL, DECOMPD. 134-80DEGREES; HEATED AT 145-550DEGREES TO 21.6PERCENT WT. LOSS, AND HEATING THE RESIDUE WITH H SUB2 O GAVE 42.5PERCENT (CH SUB2 NHCHPHP(0)ME(OH)) SUB2 (I), DECOMPD. 241-20DEGREES. SIMILAR REACTION WITH THE SCHIFF BASE FROM SALICYLALDEHYDE GAVE (CH SUB2, NHCHIC SUB6 H SUB4 OH,0)P(0)ME(OH)) SUB2 (II), DECOMPD. 223-40DEGREES. THESE ACIDS GAVE THE FOLLOWING VALUES OF THEIR RESP. PKA: I, 4.61 AND 7.84; AND II, 4.78, 7.55, 10.56 AND 11.58, FROM POTENTIOMETRIC TITRATION DATA. THE FOLLOWING STABILITY CONSTS. (LOG KAPPA) WERE CALCD. FROM TITRN. DATA WITH THE INDICATED METAL IONS, FOR THE COMPLEXES FORMED BY THE ACIDS WITH THE METALS: I; NI PRIME POSITIVE POSITIVE 6.91, CU PRIME POSITIVE POSITIVE 10.32; II; NI PRIME POSITIVE POSITIVE 7.06, 11.56, 15.39, MINUS, MINUS (FOR MH SUB2 X, MHX, MX, M(H SUB2 X) SUB2 AND MX SUB2 TYPES OF COMPLEXES, RESP.); CU PRIME POSITIVE POSITIVE 10.98, 16.74, 20.14, MINUS, MINUS; FE PRIME POSITIVE POSITIVE POSITIVE MINUS, MINUS, 31.25, MINUS, MINUS; AL PRIME POSITIVE POSITIVE POSITIVE MINUS, 15.36, GREATER THAN 20, MINUS, MINUS; AND TIO PRIME POSITIVE POSITIVE POSITIVE, 8.46, OVER 15. TII(IV) CAN BE DETD. BY MEANS OF II AS A COMPLEXING AGENT, THROUGH SPECTROPHOTOMETRY OF THE COMPLEX. FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--COMPLEXONES -U-  
AUTHOR-(03)-DYATLOVA, N.M., TEMKINA, V.YA., KOLFAKOVA, I.D.  
COUNTRY OF INFO--USSR *D*  
SOURCE--COMPLEXONES (KOMPLEKSONY) MOSCOW, KHEMIYA, 1970, 416 PP  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--COMPLEX COMPOUND, CONJUGATE BOND SYSTEM, MONOGRAPH, RARE EARTH  
METAL  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1991/0561 STEP NO--UR/0000/70/000/000/0001/0416  
  
CIRC ACCESSION NO--AM0110363  
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AM0110363

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. TABLE OF CONTENTS: PREFACE 5. INTRODUCTION 17. PART I. FUNDAMENTAL RULES AND INVESTIGATION METHODS OF THE COMPLEXING PROCESS 11. CHAPTER 1 FACTORS EFFECTING THE COMPLEXING PROCESS 11. 2 BASIC PHYSICO CHEMICAL METHODS FOR INVESTIGATION OF COMPLEXONES AND THEIR COMPLEXES 37. PART II. THE EFFECT OF STRUCTURE OF COMPLEXONES ON THEIR COMPLEXING ABILITY 80. CHAPTER 1 THE EFFECT OF BASICITY OF THE NITROGEN ATOM OF THE IMINOACETATE GROUP ON THE STRENGTH OF FORMED COMPLEXES 81. 2 CARBOXYALKYLATED AMINES 84. 3 COMPLEXONES CONTAINING HETEROATOMS, OXYGEN, NITROGEN, SULFUR IN THE HYDROCARBON CHAIN OF ALIPHATIC OR CYCLIC RADICALS 127. 4 COMPLEXONES CONTAINING VARIOUS FUNCTIONAL GROUPS CAPABLE OF COMPLEX FORMATION 137. 5 COMPLEXONES CONTAINING HIGHLY CONJUGATE SYSTEMS OF DOUBLE BONDS 192. 6 POLYCOMPLEXONES 238. PART III. PRODUCTION OF COMPLEXONES AND THEIR COMPLEXES WITH METALS 259. CHAPTER 1 FUNDAMENTAL PRINCIPLES IN PRODUCTION OF COMPLEXONES 259. 2 METHODS FOR PRODUCTION OF SOLID CHELATES 277. PART IV. USE OF COMPLEXONES AND THEIR COMPLEXES 292. CHAPTER 1 CHEMICAL ANALYSIS 293. 2 SEPARATION OF RARE EARTH ELEMENTS 335. 3 THERMAL POWER ENGINEERING 349. 4 AGRICULTURE 360. APPENDIX 369. SUBJECT INDEX 412. THE MONOGRAPH DEALS WITH THE THEORY OF ACTION OF COMPLEXONES, THEIR SYNTHESIS AND APPLICATION. THE BOOK WAS WRITTEN FOR EMPLOYEES OF SCIENTIFIC RESEARCH ENTERPRISES, COLLEGE PROFESSORS AND STUDENTS SPECIALIZING IN THE FIELD OF ANALYTICAL AND PHYSICAL CHEMISTRY.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--SOLUTION FORMATION OF MIXED COMPOUNDS OF ZINC COMPLEXONATES WITH  
AMINES AND SULFUR CONTAINING LIGANDS -U-  
AUTHOR-(03)-LASTOVAKIY, R.P., FRIDMAN, A.YA., DYATLOVA, N.M.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 701-6  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ZINC COMPLEX, AMINE, ORGANIC SULFUR COMPOUND, ACETATE,  
PYRIDINE, CHEMICAL REDUCTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1992/1607 STEP NO--UR/0078/70/015/003/0701/0706  
CIRC ACCESSION NO--AP0112601  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112601

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. MIXED COMPLEXES OF THE GENERAL STRUCTURE  $ZnL(NH\ SUB3)\ SUBM$  OR  $ZnL(NH\ SUB3)\ SUBN\ X\ SUBM$  FORM BY A REACTION OF  $ZnL$  (L EQUALS INIMODIACETATE, (HYDROXYETHYLIMINO) DIACETATE, NITRILOTRIACETATE, OR EDTA ANION) WITH X (X EQUALS PYRIDINE, H SUB2 O, SCN PRIME NEGATIVE, THIOUREA, S SUB2 O SUB3 PRIME2 NEGATIVE) IN AQ. SOLNS. THE VALUES OF STABILITY CONSTS. (BETA) OF THESE COMPLEXES DEPEND ON THE NATURE OF DONOR ATOM OF X LIGANDS AND ON POTENTIAL OF THEIR REDN. LOG BETA OF 49 COMPLEXES ARE TABULATED.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--11DEC70  
TITLE--THE AGE,SEX STRUCTURE OF PRESENT DAY TUBERCULOSIS INCIDENCE -U-

AUTHOR--DYATLOVA, N.S.

COUNTRY OF INFO--USSR

SOURCE--SOV MED 33(3): 67-72. ILLUS. 1970

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TUBERCULOSIS, MORBIDITY, EPIDEMIOLOGY, BIOLOGIC AGING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605014/B12 STEP NO--UR/0399/70/033/003/0067/0072

CIRC ACCESSION NO--AP0140464

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11DEC79

CIRC ACCESSION NO--AP0140464

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. DATA ON THE AGE AND SEX STRUCTURE OF TUBERCULOSIS INCIDENCE IN A NUMBER OF COUNTRIES OF THE WORLD AND IN THE USSR ARE PRESENTED. AT THE CURRENT STAGE OF TUBERCULOSIS DECLINE, AN INCREASING MORBIDITY AMONG MALES AS COMPARED TO FEMALES IS APPARENT, BUT IN ADOLESCENTS AND YOUNG PEOPLE AGED 20-24 THERE IS STILL A PERSISTENT PREVALENCE OF FEMALE MORBIDITY, WHICH DISAPPEARS IN THE OLDER AGE GROUPS. RESPIRATORY TUBERCULOSIS CAUSES THE GREATEST MALE MORBIDITY. HIGHER DISEASE PREVALENCE AMONG MALES OF ALL CATEGORIES, AND SHIFTING OF THE PEAK MORBIDITY LEVEL TOWARDS ELDERLY PERSONS, INDICATE THAT THE EPIDEMIOLOGICAL SITUATION HAS BECOME MORE FAVORABLE.  
FACILITY: CENT. INST. TUBERC., MIN. HEALTH USSR, MOSCOW, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--USE OF TRIFLUOROACETIC ANHYDRIDE AS AN ACYLATING AGENT IN THE  
ANALYSIS OF A MIXTURE OF AMINES -U-  
AUTHOR-(02)-GRIBOVA, YE.A., DYATLOVA, V.V.   
COUNTRY OF INFO--USSR  
SOURCE--ZAVOD. LAB. 1970, 36(1), 29-30  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--FLUORINATED ORGANIC COMPOUND, ACYL RADICAL, ANHYDRIDE, AMINE,  
POTENTIOMETRIC TITRATION  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1995/1253 STEP NO--UR/0032/70/036/001/0029/0030  
CIRC ACCESSION NO--AP0116715  
UNCLASSIFIED



2/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70  
CIRC ACCESSION NO--AP0116715  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WHEN TRIFLUOROACETIC ANHYDRIDE IS  
USED IN PLACE OF AC SUB2 O FOR ACYLATION IN THE ANAL. OF A MIXT. OF  
AMINES, THE ACYLATION CAN BE CARRIED OUT COMPLETELY AT ROOM TEMP. IN 30  
MIN. THE SAMPLE WAS THEN TITRATED BY POTENTIOMETRICALLY WITH HClO SUB4.  
THE ERROR WAS PLUS 0.24 TO MINUS 0.42PERCENT. FACILITY:  
NAUCH.-ISSLED. INST. ORG. POLUPROV. KRASITELI, MOSCOW, USSR.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--LUBRICANT FOR THE COLD AND HOT WORKING OF METALS -U-  
AUTHOR--(05)--BERGELSON, L.O., DYATLOVILSKAYA, E.V., GRESHNYKH, K.P.,  
GILZIN, M.A., CHAMIN, I.A.  
COUNTRY OF INFO--USSR  
SOURCE--U.S.S.R. 265,351  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--METALWORKING LUBRICANT, COLD WORKING, HOT WORKING, CHEMICAL  
PATENT, LUBRICANT ADDITIVE, PETROLEUM PRODUCT, HYDROGENATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAHE--3003/1801 STEP NO--UR/0482/70/000/000/0000/0000  
CIRC ACCESSION NO--AA0150634  
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0130634

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE TITLE LUBRICANT IS PREPD. BY MICROBIOLOGICAL TRANSFORMATION OF A PARAFFIN CONTG. PETROLDEUM PRODUCT, HYDROGENATION OF THE RESULTING PRODUCT, DEODORIZATION, AND MIXING WITH ADDITIVES. FACILITY: INSTITUTE OF CHEMISTRY OF NATURAL COMPOUNDS, ACADEMY OF SCIENCES, U.S.S.R.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--CHROMATOGRAPHIC DETERMINATION OF HEXAMETHYLENEDIAMINE IN WATER -U-

AUTHOR--DYATLOVITSKAYA, F.G., BOTVINOVA, L.YE.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VOLOKNA 1970, (1), 64-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MECH., IND., CIVIL AND MARINE ENGR, BIOLOGICAL  
AND MEDICAL SCIENCES  
TOPIC TAGS--HEXAMETHYLENEDIAMINE, CHROMATOGRAPHY, WATER, WASTE TREATMENT,  
SYNTHETIC FIBER, AMINO ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1984/1634

STEP NO--UR/0183/70/000/001/0064/0066

CIRC ACCESSION NO--AP0100244

UNCLASSIFIED